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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,338	10/30/2003	Jon L. Nagel	2003-0211-US	7510

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EXAMINER

AL NAZER, LEITH A


ART UNIT

PAPER NUMBER

2821

DATE MAILED: 09/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/697,338	Applicant(s) NAGEL ET AL. 	
	Examiner Leith A. Al-Nazer	Art Unit 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 and 01 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 16, 18, and 24-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 recites the term "obround". This is not a well known term in the art, and as a result, Examiner is unsure what structure is attempting to be claimed with such a term.

Claims 24-26 recite the term "the radio frequency performance of a standard quarter wave isotropic antenna". This term is vague and indefinite because the radio frequency performance of a standard quarter wave isotropic antenna is not defined in the claims.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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4. Claims 1-12, 14, 19, and 24-27 are rejected under 35 U.S.C. 102(a) as being anticipated by RU 2 205 478 to Lomovskaja et al.

With respect to claim 1, Lomovskaja teaches an antenna comprising a planar conductor (5₁, 5₂, and 5₃ in figure 1), wherein the planar conductor is self-supporting (figure 1); and wherein the radiating pattern of the antenna is substantially isotropic (page 2).

With respect to claim 2, Lomovskaja teaches the antenna comprising substantially no dielectric material (figure 1; page 2).

With respect to claim 3, Lomovskaja teaches the antenna comprising no more than one percent dielectric material by weight (figure 1; page 2).

With respect to claim 4, Lomovskaja teaches the planar conductor comprising at least one metal (figure 1; page 2).

With respect to claim 5, Lomovskaja teaches the antenna comprising at least ninety-nine percent metal by weight (figure 1; page 2).

With respect to claim 6, Lomovskaja teaches the antenna comprising at least ninety-five percent metal by weight (figure 1; page 2).

With respect to claim 7, Lomovskaja teaches the antenna further comprising a planar meander (4, 5₁, 5₂, and 5₃ in figure 1).

With respect to claim 8, Lomovskaja teaches a dielectric material attached to the planar conductor (6 in figure 1; page 2).

With respect to claim 9, Lomovskaja teaches the dielectric material comprising a conductive polymer (6 in figure 1; page 2).

With respect to claim 10, Lomovskaja teaches the dielectric material shorting out a portion of the planar meander (6 in figure 1; page 2).

With respect to claim 11, Lomovskaja teaches the dielectric material forming a tuning device for the antenna (6 in figure 1; page 2).

With respect to claim 12, Lomovskaja teaches the dielectric material forming a device for matching impedance of the antenna to a device other than the antenna (6 in figure 1; page 2).

With respect to claim 14, Lomovskaja teaches the antenna being vertically polarized (page 2).

With respect to claim 19, Lomovskaja teaches the antenna being mounted on a mobile device (page 2).

With respect to claims 24-26, Lomovskaja teaches an antenna comprising a planar conductor (5₁, 5₂, and 5₃ in figure 1), wherein the planar conductor is self-supporting (figure 1); wherein the radiating pattern of the antenna is substantially isotropic (page 2); wherein the antenna is no more than eight tenths of an inch (0.8") in height; and wherein the radio frequency performance of the antenna at 2.440 gigahertz (GHz) is within three decibels (3 db) of the radio frequency performance of a standard quarter wave isotropic antenna (figure 1; page 2).

With respect to claim 27, Lomovskaja teaches the antenna being no more than one half of an inch (1/2") in height (figure 1; page 2).

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5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 23 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,754,143 to Warnagiris et al.

With respect to claim 23, Warnagiris teaches an antenna comprising a conductor forming a partially open cylindrical shape (figures 3A-3D), wherein the conductor is self-supporting (figures 3A-3D). Claim 23 requires that the radiating pattern of the antenna be substantially isotropic. Although not explicitly stated, it is inherent that the radiating pattern of the antenna of Warnagiris would be substantially isotropic for at least the reason that the antenna of Warnagiris includes all of the structural limitations recited in claim 23.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over RU 2 205 478 to Lomovskaja et al. in view of U.S. Patent No. 6,061,025 to Jackson.

Claim 13 requires the antenna further comprise integral electrostatic discharge protection. Such discharge protection systems are well known in the art, as is evidenced by Jackson (column 10, lines 38-50). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to utilize an electrostatic discharge protection system in the antenna taught or suggested by Lomovskaja. The motivation for doing so would have been to provide means for preventing damage to the antenna due to charge buildup.

10. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over RU 2 205 478 to Lomovskaja et al. in view of U.S. Patent No. 6,753,816 to Apostolos.

Claims 15 and 16 require a secondary planar conductor be attached to the planar conductor. Secondary planar conductors are a common configuration in the art, as is evidenced by Apostolos (16 in figure 1). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to utilize a secondary planar

conductor in the system of Lomovskaja. The motivation for doing so would have been to obtain a desired radiation pattern.

With respect to claim 17, Lomovskaja teaches the planar conductor comprising a planar meander. Claim 17 requires the secondary planar conductor comprise a planar round structure. Secondary planar conductors are a common configuration in the art, as is evidenced by Apostolos (16 in figure 1). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to utilize a secondary planar round conducting structure in the system of Lomovskaja. The motivation for doing so would have been to obtain a desired radiation pattern.

11. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over RU.2 205 478 to Lomovskaja et al. in view of U.S. Patent No. 6,404,394 to Hill.

Claim 20 requires the antenna comprise a mounting capable of being hand soldered into a personal computer board. Such a mounting technique is well known in the art, as is evidenced by Hill (column 3, lines 31-35). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to utilize the mounting technique taught by Hill in the system taught or suggested by Lomovskaja. The motivation for doing so would have been to provide a cheap, reliable mounting technique.

Claim 21 requires the antenna comprise a mounting capable of being screwed into a personal computer board. Such a mounting technique is well known in the art, as is evidenced by Hill (column 3, lines 31-35). Therefore, at the time of the invention, it

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would have been obvious to one having ordinary skill in the art to utilize the mounting technique taught by Hill in the system taught or suggested by Lomovskaja. The motivation for doing so would have been to provide a cheap, reliable mounting technique.

12. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over RU 2 205 478 to Lomovskaja et al. in view of U.S. Patent No. 5,754,143 to Warnagiris et al.

Claim 22 requires the planar conductor be malleable. Warnagiris teaches such a planar conductor (figures 3A-3D; column 4, line 30 – column 5, line 15). At the time of the invention, it would have been obvious to one having ordinary skill in the art to utilize a malleable planar conductor, as taught by Warnagiris, in the system of Lomovskaja. The motivation for doing so would have been to provide means for adjusting the overall shape of the planar meander.

Allowable Subject Matter

13. Claim 18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach or suggest one or more of the limitations found in dependent claim 18. Specifically, the prior art of record fails to teach or suggest the secondary planar conductor being attached to the planar meander in the center of a planar surface of the secondary planar conductor.

Response to Arguments

15. Applicant's arguments with respect to claims 1-27 have been considered but are moot in view of the new ground(s) of rejection.

Citation of Pertinent References

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patent documents further show the state of the art with respect to antenna structures comprising planar meanders:

- a. U.S. Patent No. 5,986,616 to Edvardsson
- b. U.S. Patent No. 6,069,592 to Wass
- c. U.S. Patent No. 6,107,967 to Hill
- d. U.S. Patent No. 6,642,893 to Hebron et al.

The following patent documents further show the state of the art with respect to self-supporting radiating conductors:

- e. U.S. Patent No. 4,788,550 to Chadima, Jr.
- f. U.S. Patent No. 6,181,290 to Zaitsev et al.

- g. U.S. Patent No. 6,317,094 to Wu et al.
- h. U.S. Patent Application Publication No. 2005/0057418 to Knadle, Jr. et al.


Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leith A. Al-Nazer whose telephone number is 571-272-1938. The examiner can normally be reached on Monday-Friday, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LA


Wilson Lee
Primary Examiner